CLAIMS

What is claimed is:

1. A method for adaptively controlling the recording of diagnostic data within an implantable medical device comprising the steps of:

selectively recording diagnostic data upon the detection of predetermined recording triggers indicative of circumstances wherein diagnostic data is to be recorded; and

adaptively modifying the recording triggers so as to reduce the likelihood of any unnecessary recording of diagnostic data.

2. The method of claim 1 wherein the diagnostic data to be recorded includes one or more of: intracardiac electrograms (IEGMs) and event records.

3. The method of claim 1 wherein the step of selectively recording diagnostic data includes the steps of:

inputting initial trigger parameters for triggering the recording of diagnostic data;

monitoring cardiac rhythm; and

selectively controlling the recording of diagnostic data based on the cardiac rhythm and the trigger parameters.

4. The method of claim 3 wherein the trigger parameters include threshold values against which features of the cardiac rhythm are compared.

5. The method of claim 4 wherein the threshold values include one or more of: heart rate variability threshold values, morphology threshold values, and fast beat threshold values.

6. The method of claim 4 wherein the step of adaptively modifying the recording triggers includes the step of selectively adjusting the threshold values so as to reduce the likelihood of any unnecessary recording of diagnostic data.

7. The method of claim 1 wherein the step of adaptively modifying the recording triggers includes the steps of:

determining whether the recording triggers were properly indicative of circumstances wherein diagnostic data is to be recorded; and

if not, adjusting the recording triggers to more effectively represent circumstances wherein diagnostic data is to be recorded.

8. The method of claim 7 wherein the recording triggers are indicative of the onset of an arrhythmia and wherein the recording triggers are adjusted based up on whether an arrhythmia in fact occurred.

9. The method of claim 1 wherein the step of selectively recording diagnostic data upon the detection of predetermined recording triggers includes the steps of:

evaluating the likelihood that circumstances will arise wherein diagnostic medical data is to be recorded; and

controlling the recording of diagnostic data based upon such an evaluation.

10. The method of claim 9 wherein the step of evaluating the likelihood that circumstances will arise wherein diagnostic medical data is to be recorded is performed to identify periods of time wherein there is an elevated risk of an arrhythmia and wherein the step of controlling the recording of diagnostic data is performed to record the data at least temporarily during the period of time wherein there is an elevated risk of an arrhythmia.

11. The method of claim 10 wherein the step of identifying periods of time wherein there is an elevated risk of an arrhythmia is performed by monitoring heart rate variability and identifying periods of time with reduced heart rate variability.

12. The method of claim 9 wherein the step of evaluating the likelihood that circumstances will arise wherein diagnostic medical data is to be recorded is performed to predict the onset of an arrhythmia and wherein the step of controlling the recording of diagnostic data is performed to activate recording prior to the predicted onset of the arrhythmia.

13. The method of claim 12 wherein the step of predicting the onset of an arrhythmia is performed by monitoring cardiac rhythm.

14. The method of claim 13 wherein the step of monitoring cardiac rhythm to predict the onset of an arrhythmia includes the step of:

examining the morphology of heart beats and predicting the onset of an arrhythmia based on detection of a significant change in morphology.

15. The method of claim 8 wherein the step of evaluating the likelihood that circumstances will arise wherein diagnostic medical data is to be recorded is performed to detect the onset of an arrhythmia and wherein the step of controlling the recording of diagnostic data is performed to activate recording upon detection of the onset of the arrhythmia.

16. The method of claim 15 wherein the step of monitoring cardiac rhythm to detect the onset of an arrhythmia includes the step of:

counting a number of beats occurring at a rate above a predetermined rate threshold and detecting the onset of an arrhythmia based on detection of a predetermined number of beats having a rate above the rate threshold.

17. The method of claim 16 wherein the predetermined number of beats having a rate above the rate threshold is in the range of one to three beats.

18. The method of claim 16 further the including the step of confirming that an arrhythmia actually occurred and, if the arrhythmia is not confirmed, deactivating the recording of diagnostic data.

19. The method of claim 15 wherein the step of adaptively modifying the recording triggers so as to reduce the likelihood of any unnecessary recording of diagnostic data includes the steps, performed if the arrhythmia is not confirmed of selectively incrementing the number of beats required to trigger activation of the recording of diagnostic data.

20. The method of claim 19 the number of beats required to trigger activation of the recording of diagnostic data is selectively incremented upon detection of two consecutive episodes wherein the recording of diagnostic data was activated but the arrhythmia was not subsequently confirmed.

21. The method of claim 1 wherein the diagnostic data to be recorded includes one or more of: intracardiac electrograms (IEGMs) and event records.

22. The method of claim 1 wherein the step of selectively recording diagnostic data upon the detection of predetermined recording triggers indicative of circumstances wherein diagnostic data is to be recorded includes the steps of:

activating the recording of diagnostic data in a temporary memory upon the detection of predetermined recording triggers; and

transferring data from the temporary memory to long-term memory upon subsequent confirmation that such circumstances actually occurred.

23. A method for controlling the recording of diagnostic data within an implantable medical device, the method comprising the steps of:

evaluating the likelihood that circumstances will arise wherein diagnostic medical data is to be recorded;

controlling the recording of diagnostic data based upon such an evaluation;

determining whether the circumstances wherein diagnostic medical data is to be recorded actually occurred; and

adaptively modifying parameters employed to evaluate the likelihood of such circumstances so as to reduce the risk of unnecessarily recording of diagnostic data.

24. A system for controlling the recording of diagnostic data within an implantable medical device, the system comprising:

a memory operative to record diagnostic medical data; and

an adaptive-based diagnostic controller operative to selectively record diagnostic data in the memory upon the detection of predetermined recording triggers and further operative to adaptively modifying the recording triggers so as to reduce the likelihood of any unnecessary recording of diagnostic data.

25. A system for adaptively controlling the recording of diagnostic data within an implantable medical device comprising:

means for storing data;

means for selectively recording diagnostic data within the means for storing upon the detection of predetermined recording triggers indicative of circumstances wherein diagnostic data is to be recorded; and

means for adaptively modifying the recording triggers so as to reduce the likelihood of any unnecessary recording of diagnostic data.